

REMARKS

In the Office Action dated April 24, 2003, claims 1-6, 9-22, 30, 31, and 34-41 were rejected under 35 U.S.C. § 103 over U.S. Patent No. 5,857,180 (Hallmark) in view of U.S. Patent No. 6,434,545 (MacLeod); claim 23 was rejected under § 103 over MacLeod in view of U.S. Patent No. 6,289,334 (Reiner); claims 24-27 and 29 were rejected under § 103 over MacLeod in view of Reiner and U.S. Patent No. 6,067,542 (Carino); and claims 7, 8, 32 and 33 were rejected under § 103 over Hallmark in view of MacLeod and Reiner.

The asserted combination of Hallmark and MacLeod does not teach or suggest the invention of claim 1. As conceded in the Office Action, Hallmark does not disclose the depicting act of claim 1, namely depicting parallel execution of steps of a query execution plan in a graphical user interface that includes displaying plural elements corresponding to concurrently executing plural steps on respective processors of a parallel database system. Hallmark relates to implementing parallel processing in a database management system. *See* Hallmark, Abstract. However, there is no indication whatsoever within Hallmark of depicting parallel execution steps of a query execution plan in a graphical user interface.

MacLeod also fails to disclose the depicting element of claim 1. The Office Action cited to column 8, lines 7-49 of MacLeod as teaching the act of depicting parallel execution of steps of a query execution plan in a graphical user interface. The cited passage within MacLeod refers to Figures 5 and 6 of MacLeod. Figure 5 of MacLeod displays two *different* query plans for two *different* queries, not parallel execution of steps of *the* query execution plan. *See* MacLeod, 7:13-16 (Figure 5 depicts a user interface that shows graphical analysis of *two* specified queries). The two queries are shown in the window 220 of Figure 5.

Figure 6 of MacLeod depicts a user interface that shows graphical analysis of one specified query with multiple operations. MacLeod, 8:29-32. Although the displayed tree structure 210 of Figure 6 represents an execution plan that has operation node icons 211 to represent different operations of the execution plan, the displayed tree structure

210 does not display plural elements corresponding to concurrently executing plural steps on respective processors of the parallel database system.

There is nothing within MacLeod to even remotely suggest the depiction of parallel execution of steps of a query execution plan in a graphical user interface. Therefore, even if MacLeod can be properly combined with Hallmark, the asserted combination of references does not teach or suggest the claimed invention. For at least this reason alone, a *prima facie* obviousness rejection has not been established with respect to claim 1.

Moreover, there is no suggestion or motivation to combine Hallmark and MacLeod. Although Hallmark describes implementing parallel processing in a database management system, there is no suggestion anywhere within Hallmark of the need for displaying steps of a generated query execution plan in a graphical user interface. MacLeod, similarly, is silent on depicting *parallel execution* of steps of a query execution plan in a graphical user interface. A person of ordinary skill in the art, at the time of the invention, looking to Hallmark and MacLeod, would find no suggestion or motivation to combine the teachings of Hallmark and MacLeod. The Examiner cited the following motivation in the Office Action for combining Hallmark and MacLeod: "[t]he motivation being to have enabled a user to provide information for optimizing a query in a massively parallel system and to pop up multiple display screens illustrating multiple execution query plans so that a user may select the most desirable." 4/24/2003 Office Action at 2-3. Applicant respectfully notes that the cited motivation mis-states the invention. The invention is directed to displaying plural elements corresponding to concurrently executing plural steps on respective processors of a parallel database system. The motivation for enabling a user to provide information for optimizing a query in a massively parallel system and to pop up multiple display screens illustrating multiple execution query plans would not have led a person of ordinary skill in the art to the claimed invention.

Therefore, because there is no motivation or suggestion to combine Hallmark and MacLeod, it is respectfully submitted that a *prima facie* obviousness rejection has not been established with respect to claim 1 for this further reason.

Independent claim 30 is allowable over the asserted combination of Hallmark and MacLeod for similar reasons.

Independent claim 11 was also rejected as being obvious over Hallmark and MacLeod. The Office Action cited to column 6, lines 11-54, of Hallmark as disclosing the first two acts of claim 11, namely determining a first execution plan of *the query* under a first condition, and determining a second execution plan of *the query* under a second condition. The cited passage of Hallmark does *not* disclose determining plural execution plans of the *same* query. For this reason alone, the obviousness rejection with respect to claim 11 is defective.

Moreover, the Office Action cited to Figures 5 and 6 and corresponding text of MacLeod as disclosing the displaying act. In citing MacLeod as disclosing the displaying act, the Office Action does not address how MacLeod teaches or suggests displaying first and second query execution plans of the *same* query under first and second conditions. As noted above, Figure 5 of MacLeod shows two query plans for two queries, not for the same query. For this additional reason, the obviousness rejection of claim 11 is defective.

In view of the foregoing, it is respectfully submitted that the asserted combination of Hallmark and MacLeod does not teach or suggest the invention of claim 11.

Independent claim 23 was rejected as being obvious over MacLeod and Reiner. As conceded by the Office Action, MacLeod does not disclose a controller to determine an execution plan of a query based on emulation data that emulates an environment of a target system in which a parallel database system is implemented. Rather, the Office Action cited to column 31, lines 1-14 of Reiner as disclosing this element of claim 23. Applicant respectfully disagrees that Reiner discloses the missing element. First, Applicant notes that claim 23 recites determining an execution plan of a query based on emulation data that *emulates an environment of a target system in which a parallel database system is implemented*.

The cited passage in MacLeod describes a set or routines (PUP) that emulates the calling sequence and behavior of UPI routines. The cited passage also discusses combining results to emulate the result of an original query. Thus, two emulations are referred to in column 31, emulating a calling sequence and behavior of a set of routines

(the UPI routines), and emulating the result of a query. There is no teaching whatsoever in Reiner of emulating an environment of a target system in which a parallel database system is implemented. Therefore, even if MacLeod and Reiner can be properly combined, they do not teach or suggest the invention of claim 23.

In view of the foregoing, all claims are in condition for allowance, which action is respectfully requested. The Commissioner is authorized to charge any additional fees, including extension of time fees, and/or credit any overpayment to Deposit Account No. 50-1673 (9020).

Respectfully submitted,

Date: _____

7-24-03



Dan C. Hu, Reg. No. 40,025
TROP, PRUNER & HU, P.C.
8554 Katy Freeway, Suite 100
Houston, TX 77024
713/468-8880 [Ph]
713/468-8883 [Fax]